Basic Features of LATS

- LATS outputs rectilinear, gridded, spatio−temporal data. The fundamental unit of data written with a single function call is a horizontal longitude−latitude slice of a variable. However, derivative structures such as zonal mean−height cross sections (i.e., a sequence of single−longitude, multiple−latitude grids) are supported.
- LATS data written in either GRIB and/or netCDF are machine independent.
- LATS maintains an internal parameter table that prescribes variable names, description, units, datatype, basic structure (e.g., upper air or surface), and compression (GRIB options). These descriptors are inferred from the parameter name only. Thus, most of the metadata needed to write GRIB and/or netCDF data are located in the parameter table to simplify the API.
- An option is provided to override the internal table with an external parameter file. LATS parameter tables are designed to fit specific needs, such as those of AMIP and CMIP.
- More than one LATS file may be open simultaneously for output.
- For a given timepoint, multiple variables and variables at multiple levels may be written in any order.
- Data can only be written in increasing time sequence.
- All data are floating−point or integer. Only FORTRAN REALS (C floats) and INTEGERS (C ints) can be written

Restrictions

- All variables written to a given file must share a common frequency (e.g., hourly, daily, monthly, etc.).
- All fields must be rectilinear gridded data (e.g., Gaussian grid data is acceptable, but "thinned" Gaussian grid data − where the number of longitude grid points is a function of latitude − is not).
- *All variables must be declared (including all their dimensions and attributes) before any numerical data are written* to a LATS file.
- *All variables for a given time slice must be written before proceeding to the next time slice*